



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/709,208	04/21/2004	David Gascoyne	148527-1	3207

43248 7590 03/29/2006

CANTOR COLBURN LLP - GE PLASTICS - SMITH
55 GRIFFIN RD SOUTH
BLOOMFIELD, CT 06002

EXAMINER


MAI, THIEN T

ART UNIT	PAPER NUMBER
----------	--------------

2876

DATE MAILED: 03/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center">Office Action Summary</p>	<p>Application No.</p> <p>10/709,208</p>	<p>Applicant(s)</p> <p>GASCOYNE ET AL. </p>	
	<p>Examiner</p> <p>Thien T. Mai</p>	<p>Art Unit</p> <p>2876</p>	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-49 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-18, 25, 27-32, 37-47 and 49 is/are allowed.
- 6) ☒ Claim(s) 19-24, 26, 33-36 and 48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/2005, 10/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Acknowledgement

1. Acknowledge is hereby made of the amendment filed 12/15/2005.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim(s) 19-24, 26, 33, 35-36, and 48 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over Oshima (20050163026) in view of Gonzalez et al. (US 6,380,547). Oshima discloses a device comprising:

- a reading device of optical data storage medium as an analog measurement device having a polarizer and is capable of generating an analog signal detected by a photo-detector in the reading device (Specification par. 0017, Fig. 9C).
- a comparator that determines the detected signal is from an authentic medium by comparing a write-once information (or BCA data) written in strips **220a** and **220b** to predetermined area of an optical disk with watermark information. Then, the video signal is outputted if the two information match. See Fig. 41-42 and reference text below:

"[0216] If main information, such as a video signal, is recorded on the BCA disks 11a, 11b, or 11c, the BCA reproduction portion 39 first reads out the BCA signal including the different IDs, as shown in FIG. 41. Then, a watermark recording portion 264 converts the video signal by superimposing the BCA signal and a recording circuit 272 records the converted video signal on the BCA disks 11a, 11b, and 11c (300 (240, 800) in FIG. 41). When the video signal onto which the BCA signal has been superimposed is reproduced from the BCA disk 300 (240, 800), the BCA reproduction portion 39 reads out the BCA signal of the disk, and detects it as the ID1 of the disk. A watermark reproduction portion detects the video signal onto which the watermark has been superimposed as disk ID2. A comparator compares the ID1 read out from the BCA signal with the disk ID2 read out from the watermark of the video signal, and when the two IDs do not match, the reproduction of the video signal is stopped. As a result, the video signal of an illegal disk onto which a watermark that is different from the BCA signal has been superimposed cannot be replayed. On the other hand, if both IDs match, a descrambler 31 descrambles the video signal with the superimposed watermark using a compound key comprising ID information read out from the BCA signal, and the video signal is output. " (Specification par. 0216)

Art Unit: 2876

- an information device capable of reading from and writing data and/or watermark onto the optical disk and is in communication with the comparator.

(Fig. 14, 42)

Oshima fails to expressly disclose the device capable of detecting multi-wavelength spectral analog signature.

Gonzalez discloses a method/apparatus for determining an authenticity of a storage medium such as CD-ROMs (col. 7 line 7+), comprising: generating a multi-wavelength spectrum from the storage medium by exposing it with an excitation light source and storing the fluorescent spectrum from the reflected light emission on a paper, computer memory, or a code encoded on the CD-ROM including the wavelength information of the excitation light (col. 8 lines 60-68, col. 9 lines 1-10); comparing multi-wavelength spectrum signature stored to a multi-wavelength spectrum obtained from exposing the storage medium to a light source at the predetermined wavelength at later time, if the two spectrum yield the same result with decaying factor taken into consideration, then the authenticity of the storage medium is confirmed (col. 8 lines 42-50).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the marking techniques taught by Gonzalez in addition to those of Oshima so that the information on the storage medium is further protected and extremely difficult to be pirated, thus increasing the profitability.

Regarding claim(s) 22, Oshima discloses a CATV station, as kiosk system, is setup to comprise a reproduction apparatus to reproduce video onto pre-manufactured disks supplied by film studio (Specification par. 00219, 00234)

Regarding claim(s) 23, Oshima discloses a receiver **50** capable of receiving data storage medium from an external source broadcasted from a broadcasting device (Specification par. 0227)

Regarding claim(s) 24, Oshima discloses the reader component is used to measure a light reflected from an optical disk (Fig. 7-10).

Regarding claim(s) 26, Oshima discloses there are at least two different BCA stripes on the disk to be measured (Specification par. 0118) and that the BCA stripes are made into a barcode that can be scanned using a barcode scanner (Specification par. 0161, Fig. 22), inherently implies at least two different detected analog signatures from each stripe are generated by the measurement device.

4. Claim(s) 34 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over Oshima (20050163026), modified by Gonzalez et al. (US 6,380,547) as applied in claim 33 above, further in view of Durham (US 5,532,998). The teachings of Oshima (20050163026)/Gonzalez et al. (US 6,380,547) have been discussed above.

5. Oshima (20050163026)/Gonzalez et al. (US 6,380,547) fails to expressly teach or fairly suggest the step of determining if the multi-wavelength spectral analog signature is from an authentic medium further comprises comparing the multi-wavelength spectral analog signature in at least three distinct spectral ranges.

6. Durham teaches a optical signature detection system in a storage medium 102, in which a dispersive means in the form of a prism capable of generating multi-wavelength spectral analog signal that is being detected by an array of avalanche photodiodes, wherein each of the photodiodes is capable of detecting a multi-wavelength analog signal. See reference text below:

"The light emitted from the irradiated portion of the storage medium is collimated by objective lens 126 and transmitted to the wavelength dispersive element 144, such as a prism or diffraction grating. In this preferred embodiment, a photodetector array 148 is employed to measure the spatial array of light intensity emerging from the analyzer or wavelength dispersive element 144. In accordance with the operation of the dispersive element 144 and configuration of detector array 148, individual detector signals will indicate the light intensity for a specific range of light wavelengths. For example, the light intensity at the source wavelength λ_s may be sensed by a particular detector in the array 148. Moreover, the intensity of every wavelength of light emitted by medium 108 will be represented as a corresponding signal measured by a detector in array 148. The spectra of emitted radiation, other than that at the source wavelength, represents a signature for light emission under the specific conditions of operation, thus allowing information encoding by virtue of changes in the emission spectra.

The detector array 148 allows measurement of the emitted light intensity over separately addressable wavelength intervals, such as found in optical multi-channel analysis. The intensity spectra measured by detector array 148 may comprise an emission spectra of a single data channel, in which case the correlated signals from elements in the detector array may be used to improve the signal:noise ratio. For example, a predetermined data channel may be identified by light emission at a plurality of wavelengths. While it is necessary to measure the light intensity at one wavelength, it is preferable to

correlate detector elements operating at different wavelengths comprising emission from the data channel. Hence, for a given data channel, a plurality of detector elements comprising the detector array 148 will contribute to a correlated signal detection arrangement. " (col. 14 lines 42+)

"However, it is possible that these optical processes display such low emissive power that the signal:noise ratio is unacceptably low. Such compromised signal characteristics may produce either an unacceptably low bit rate or bit-error rate. Thus, it is desirable to augment the embodiment 100 disclosed in connection with FIG. 4 with optical processes designed to improve the optical signal:noise ratio. As shown by the system 180 in FIG. 5, a basic modification of the system of FIG. 4 may comprise replacing detector 142 with a combination comprising a wavelength dispersive element 144 followed by a spatial intensity modulator 146 and a detector array 148. The wavelength dispersive element 144 may, for example, comprise a prism, but preferably comprises a diffraction grating. The spatial light modulator 146 may comprise an array of independently addressable liquid crystal light valves well known in the art or alternatively, may comprise an array of electro-optic intensity modulators, or other equivalently functioning device. Furthermore, the detector array 148 may, for example, comprises a monolithic array of photodiodes, but preferably comprises an array of avalanche photodiodes providing greater sensitivity." (col. 13 lines 59+)

7. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teachings of Durham to those of Oshima/Gonzalez by employing the dispersive means and/or having the medium/tag made of the same contents as the dispersive means and employing the array of avalanche photodiode for detecting multiple spectral analog signature.

Art Unit: 2876

8. One of ordinary skill in the art would be motivated to employ the teachings of Durham since it enhances the detection of pirated/illegal copies of intellectual properties and offers a more accurate proof of those that are genuine or pirated.

Allowable Subject Matter

9. Claims 1-18, 25,27-32, 37-47, 49 are allowed.

10. The following is a statement of reasons for the indication of allowable subject matter:

Re claim(s) 1-18, 37-45, and 49, exhaustive search of Prior Art of record does not reveal an authentication system comprising two light sources and at least three light sensing devices, wherein

- the first light source capable of generating a photoluminescent emission from a medium having a luminescent tag and a color,
- the second light source capable of generating a second analog response different from the luminescent emission, and
- the light sensing devices are for detecting analog emission intensity in a spectral sensitivity range

wherein each light sensing device has a different device spectral sensitivity range which includes at least a portion of the visible multi-wavelength spectral distribution, and

wherein the device spectral sensitivity range of at least one of the light sensing devices includes at least a portion of a desired photoluminescent emission wavelength range; and

Art Unit: 2876

wherein each light sensing device is configured to receive at least one of the photoluminescent emission and the second analog signal.

Re claim(s) 25 and 46-47, Prior Art does not teach a data device comprising an authentication analog measurement device with the specifics similar to those as detailed in claim 1 and further comprising a comparator for determining if the detected analog signature is from an authentic medium and an information device capable of reading/writing to the authentic medium

Claim(s) 27-32 are allowable based on similar reasons as cited for claim 1.

Remarks

11. The Examiner acknowledges the objection regarding Drawings marked on the Office Action Summary sheet is an inadvertent error. There are no objections on the drawings.

12. Applicant's arguments filed 12/15/2005 have been fully considered but they are not persuasive.

13. In response to applicant's argument that the Oshima reference in previous Office Action does not anticipate presently amended claim including new limitation "...multi-wavelength spectral signature"; however, the present Office Action proves that the new limitation is not novel to those skilled in the art as explained above. Therefore, the rejection is maintained.

14. Applicant's arguments do not comply with 37 CFR 1.111(c) because they do not clearly point out the patentable novelty with respect to reference Shchegolikhin et al. which he or she thinks the claims present in view of the state of the art disclosed by the

Art Unit: 2876

references cited or the objections made. Further, they do not show how the amendments avoid such references or objections.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Bril et al. (20040156081), Krieger et al. (US 6,181,662), Sillman et al. (20040094626), Shchegolikhin (20040058058), Dorsel (20050110993), Bruhn et al. (20050026154) pertain to multi-wavelength spectral emission of label/tag/medium and/or the utilization of avalanche photodiode for detection of the spectral emission.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thien T. Mai whose telephone number is 571-272-8283. The examiner can normally be reached on Monday through Friday, 8:00 - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Lee can be reached on 571-272-2398. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thien T Mai

Application/Control Number: 10/709,208

Page 12

Art Unit: 2876

Examiner
Art Unit 2876

TM

A handwritten signature in black ink, appearing to read 'Thien M. Le', with a stylized, flowing script.

**THIEN M. LE
PRIMARY EXAMINER**